CS51

NEW SCHEME

USN | | | | | | | | | |

Fifth Semester B.E. Degree Examination, January/February 2005

Computer Science / Information Science and Engineering

Systems Software
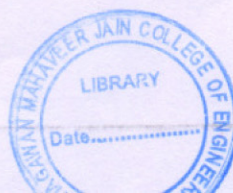
Time: 3 hrs.]   [Max.Marks : 100

Note: Answer any FIVE full questions.

1. (a) Explain different instruction formats used in SIC/XE machine.   **(6 Marks)**

   (b) With reference to pentium pro architecture, explain the following :

   i) Memory ii) Register iii) Data format   **(8 Marks)**

   (c) Suppose that Alpha is an array of 100 words, write a sequence of instruction for SIC to set all 100 elements to zero.   **(6 Marks)**

2. (a) Bring out the differences between CISC & RISC.   **(4 Marks)**

   (b) Enlist the various assembler features that are machine dependent and machine independent. Explain any one of them from each.   **(10 Marks)**

   (c) Write a note on MASM assembler.   **(6 Marks)**

3. (a) Give the format for the following record necessary to obtain object code:

   Header record
   Text record
   Refer record
   Define record
   Modification record (revised)
   End record   **(12 Marks)**

   (b) With an example explain how program linking can be done.   **(8 Marks)**

4. (a) With figure explain how loading & calling of a subroutine can be done using dynamic linking.   **(8 Marks)**

   (b) Explain with example concatenation of macro parameter and generation of unique lables.   **(8 Marks)**

   (c) What is the problem in invocation of macros within macros? Explain with an example.   **(4 Marks)**

5. (a) What are the advantages & disadvantages of line-by-line microprocessor?   **(6 Marks)**

   (b) Explain the lexical analysis phase of compiler with example.   **(10 Marks)**

   (c) Give BNF grammar to recognise the following statements used in Pascal program :

   i)   the assignment statement

   ii) Read statement   **(4 Marks)**

6. (a) Explain operator-precedence parsing with an example.   **(10 Marks)**

   (b) Explain briefly the following storage allocation used in compilation

       i)   static storage allocation

       ii)   automatic storage allocation.   **(6 Marks)**

   (c) Briefly explain Debugging functions.   **(4 Marks)**

7. (a) Explain the meta characters used in regular expression with an example.   **(8 Marks)**

   (b) Explain the conflicts in YACC with example.   **(6 Marks)**

   (c) Write YACC program to check whether the given string $b^n a^n (n > 0)$ is accepted by the grammer or not.   **(6 Marks)**

8.   Write short notes on the following :   **(5×4=20 Marks)**

       i)   Compiler - compiler

       ii)   AIX - assembler

       iii) ELENA macro processor

       iv) Linkage editor

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